

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): An air separator, comprising:

an air compression means for taking in air from the outside and compressing the air at a low pressure,

an oxygen concentrating means ~~for concentrating oxygen gas~~ provided with an adsorbent for adsorbing nitrogen gas that is contained in the air compressed by the air compression means,

an oxygen/air compression means for further compressing oxygen-rich compressed air (X) passed through the oxygen concentrating means,

a heat exchanger for cooling oxygen-rich compressed air (Y) passed through the oxygen/air compression means, and

a rectification tower for taking out oxygen gas by separating the oxygen-rich compressed air (Y) passed through the heat exchanger so as to be cooled to a low temperature by utilizing differences in boiling points of elemental gases,

wherein the oxygen concentrating means is an adsorption tower having an upstream side and a downstream side, the upstream side of the tower being filled with a silica gel as an adsorbent for adsorbing impurities including moisture and hydrocarbon contained in the compressed air, the downstream side of the tower being filled with a molecular sieve as an adsorbent for adsorbing nitrogen gas contained in the compressed air at a downstream side,

wherein the air compression means, the oxygen concentrating means and the oxygen/air compression means are arranged in one line and a total amount of the compressed air compressed by the air compression means is supplied to the oxygen/air compression means.

2. (Cancelled)

3. (Previously Presented): The air separator as set forth in claim 1, further comprising an elimination means for eliminating impurities in the oxygen-rich compressed air (Y) between the oxygen/air compression means and the heat exchanger.

4. (Cancelled)

5. (Previously Presented): The air separator as set forth in claim 1, wherein a part of the air compressed by the air compression means is not passed through the oxygen concentrating means, but is directly supplied to an inlet path for introducing the oxygen-rich compressed air (X) passed through the oxygen concentrating means into the oxygen/air compression means.

6. (Cancelled)

7. (Previously Presented): The air separator as set forth in claim 3, wherein a part of the air compressed by the air compression means is not passed through the oxygen concentrating

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means, but is directly supplied to an inlet path for introducing the oxygen-rich compressed air (X)
passed through the oxygen concentrating means into the oxygen/air compression means.

8. (Cancelled)